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The HIT Team's star recruit

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Lt Roxanne Heaton's day job is Synthetic Training Lead in a Royal Navy Technology Based Training Unit. In layman's terms, Roxanne provides advice and consultancy on emerging synthetic technologies across the Royal Navy (including the Royal Marines.) This means acting as a principal consultant for the research and development of technology-based training solutions in order to meet the requirements of the versatile maritime force which is the Royal Navy.

Before joining the training unit, Roxanne has held various positions within the Navy, including Education Officer on deployed ships, an Aide de Camp for the Defence Attaché to Iraq, and a Marine Engineering Instructor aboard the HMS Sultan.

So it is not surprising that Roxanne has decided to do her PhD study here in Birmingham, as part of Professor Bob Stone's Human Interfaces Technologies (HIT) Team. This team works closely with the military, and has a number of exciting new technologies which are currently being trialled and used across the Services. Roxanne's decision to come here will further strengthen those ties, and her experiences and skills will be a valuable addition to the team.

> We're delighted that Lt Heaton has decided to come to Birmingham to study for her PhD, and with the Human Interface Technologies Team in particular. During our defence research projects over the past decade, we've had excellent relationships with the Royal Navy, including the Technology-Based Training Unit at HMS Collingwood, where some of our simulation software has actually been installed to train RN Officers-of-the-Watch in "Rules of the Road" procedures. Lt Heaton's interests in topics such as Augmented Reality, games-based simulation, interactive technologies and the pros and cons of "live" vs. "virtual" training gel exactly with those of our research team. Her husband, Sean, is an RN clearance diver and has also been of great help to our School, diving with his colleagues on the wreck of the ex-HMS Scylla over the summer to obtain images and video footage to help us plan for this year's BEng student remotely operated submersible project.
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> **Professor Bob Stone (/staff/profiles/eece/stone-bob.aspx)**

Read this fascinating interview with Roxanne, as she tells what she will be studying, why she chose Birmingham, and how her work with the HIT Team will benefit her, and ultimately the men and women putting their lives on the line.

Tell us about what you will be studying?

I've applied to study a part-time PhD with the HIT Team within the School of EECE. The area of study will involve researching synthetic training options for the Royal Navy—essentially following on from a Postgraduate MSc I recently completed in Defence Simulation and Modelling.

Why did you choose Birmingham?

The spectrum of Virtual Reality and the associated Human Factors considerations interested me throughout my MSc, culminating in the subject of my thesis. I investigated Augmented Reality as a potential training solution for the Royal Navy and through this research I read many articles and research papers by Professor Bob Stone and his team, both through the University of Birmingham and particularly during his role as the Research Director of the Human Factors Integration Defence Technology Centre.

I believe that Bob and the HIT Team have carried out cutting edge research and development in the Human Factors area with regards to Technology and Training with UK and International Defence agencies including the Royal Navy across a range of applications (submarine training, close range weapon training, helicopter voice marshalling and Counter-Improvised Explosive Devices to name a few.) As a result I felt I should advance my knowledge and the understanding in this field through applying to work with Bob and his awardwinning team.

You've worked in some challenging locations—did this inform your choice of PhD study?

Working for the Royal Navy is stimulating and wide-ranging. I've had some fascinating jobs deployed overseas, and here in the UK as my role is in training, they have all shaped where I am today.

From pre-deployment training on virtual gunnery ranges and training sailors mid-way across the Atlantic, to teaching the inner workings of a diesel engine (one which is several times bigger than your average car engine!), and developing e-learning engineering training for sailors deployed and ashore, the role has been varied and hugely rewarding.

The core to all these which have shaped my experience was – and still is – how our sailors react and train to take forward all these technological based training solutions. This highlights how key Human Factors considerations are crucial to all training solutions in order to elicit the most beneficial training for the individuals and the Royal Navy. In this way, being able to benefit from PhD supervision by Bob and his HIT Team, the University of Birmingham will support my research aspirations, ultimately to deliver the benefits of new knowledge and scientific advances to current and future sailors and marines.

Your husband is a Royal Navy Mine Clearance Diving Officer - does your work cross over?

It does, as a Mine Clearance Diving Officer and a Warfare Officer; he is a practitioner who is also based on a deployable unit. This makes his wealth of knowledge and experience ideal for me to bounce my technology-based solutions off him which could aid across the spectrum of his work. Incidentally, Sean and his team also helped Bob during the summer to conduct a photographic survey of the wreck of the HMS Scylla in Whitsand Bay, ready for presentation to Bob's BEng remotely operated submersible project students in October.

Why did you decide to join the Royal Navy?

I joined the University Royal Naval Unit during my first degree and loved the weekends and evenings spent onboard our unit Ship and within unit. Although I studied Aeronautical Engineering, I soon realised that there are a wide range of branches you can join which suit different people, skills and passions.

What's the best thing about working in the Royal Navy?

The range of jobs, the places you see and the people you meet. Being part of the Royal Navy makes you part of a team. The opportunities for growth in academics and sport are vast depending on what you want to achieve! The Royal Navy supports and encourages personal growth and I'm excited to not only study with Birmingham but see how I can use the skills developed on my PhD throughout the rest of my Royal Naval career, wherever it takes me in the world.

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